

**STUDY OF CAREER AND TECHNICAL EDUCATION
ADVISORY GROUP MEETING**
Issues from Roundtables

Central Virginia Roundtable – Hanover Center for Trades and Technology

- Virginia has a strong CTE program. CTE provides pathways for young people to be life long learners.
- There is a need for a well-trained workforce, particularly true in Hanover. This drove the creation of the Hanover Center for Trades and Technology.
- Currently, there is much emphasis on college and liberal arts which may generate “paper-pushers”. Not as much emphasis for trades, manufacturing or other CTE pathways. These jobs are actually more secure and generate strong earnings and a strong workforce.
- Localities may be focusing more on demand and not as much on supply. For example, many students may want to pursue Forensic Science (e.g. CSI) but maybe there will only be ten jobs per year in this field.
- Another example is Qimonda, which was a major driver of the workforce in Central Virginia, but now that it is out of business, there is a serious need for workforce retraining.
- Workforce Investment Act, local Workforce Investment Boards, these entities deal with issues of workforce training. However, there may be overlap with other agencies. Look at funding and coordination with other agencies.
- Another issue is that manufacturing jobs are available but manufacturing is a hard sell for students. Assembly line perception but this is not accurate. Manufacturing concrete pipe is now an automated process. There is a need to show this to students; particularly while they are young.
- Engineering must not be overlooked. The biggest challenge is finding and training engineers. Significant need for engineers.
- CTE certifications need to be aligned with actual employers’ needs. Some certifications received through CTE may not be what employees need and school divisions are covering the cost of students receiving industry credentials, which may not match what employers want.
- Students need to have “workplace readiness skills”, these are skills that are crucial such as punctuality, work ethic, how to count out change, etc.
- Hard to find qualified and reliable workforce. Once employers conduct a credit check, a criminal background check and a drug screen, 80 percent of all applicants can be eliminated.
- Work ethic is also an issue for employers. For example, gutter installers can potentially earn \$70,000 per year but employees do not want to work 40 hour weeks, may not be dependable and do not always show up for jobs. Employers cannot maintain and grow their business unless they have a skills and reliable workforce.

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- Customer service is also not emphasized. Very difficult to obtain employees with adequate customer service skills. Difficult skill to master.
- It is important to remember that schools can teach skills, employers can teach the basics but it is not all up to the schools. Parents have a role.
- Some industries are suffering from an aging workforce and are having difficulty attracting new talent because the perception is that these jobs (e.g., HVAC mechanic) are not “sexy”.
- Outreach to students and parents on CTE may be too late to attract them to CTE. Students may not find out about CTE until 9th or 10th grade. They may have other electives they want to pursue instead of CTE.
- Add to the “wish list” – more time built into the day and into the curriculum for CTE.
- Academic and Career Plans (ACP) may help with earlier planning and the provision of CTE to students at an earlier age.
- Financial Literacy Classes are important but negatively impact CTE because school administrators may use class time that could be used for CTE to fulfill these requirements. Must compete with another elective.
- There is a need for advocacy/PR describing the benefits of CTE. Schools, counselors and parents have no clue on the benefits of CTE and how their children can access it.
- Need to identify those occupations with shortages of qualified workers and incorporate into CTE (e.g., large animal veterinarians).

Northern Virginia Roundtable – Chantilly Academy

- Industry certifications are costly. Local decision in what is covered. In Fairfax, it is very expensive to cover the costs of certification including pre-tests, practice tests. In Fairfax 3,700 earn an industry certification. ACAC certifications cost \$125.
- It is difficult to find qualified teachers certified to teach in CTE programs. For example, a teacher may be certified in science and have a teaching certificate but cannot be a CTE teacher.
- It is important not to forget the vocational component in CTE in lieu of academic rigor. There is a need for both elements. Plumbers and carpenters play a major role in the workplace.
- Programs must generate enough interest to get students to participate to justify the creation of a program/lab.
- There is a huge stigma surrounding CTE. Parents push for college. CTE = blue collar.

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- Issues surrounding dual enrollment. Dual enrollment a very good option for students and a viable pathway to a good job. However, there are no statewide guidelines for the administration of dual enrollment in CTE. It would be helpful to have portability of credentials and transparency of pathways. There are unequal processes for dual enrollment across the Commonwealth. If this was rectified, more students in Virginia could graduate with a CTE certificate and college credits. Systemic issue because not the same across the Commonwealth.
- Issue with teacher credentials pertaining to dual enrollment. Teachers must have Master's degree and 18 credit hours in the course. Very difficult. Possibly utilize online classes through the local community college when there is a shortage of qualified teachers.
- Economic incentives from business partners help provide training and jobs to students. Employers not always welcomed into the schools.
- Parents and counselors unaware that a majority of future jobs will not require a 4-year degree.
- Need for more industry related training in CTE.
- Career planning must start sooner in a student's educational career. Also, have students made aware of professions with growth and high demand. An example of this is that health allied professions there are huge demands. Not just nurses but X-Ray Technicians and other health technicians, radiologists. Very strong job stability.
- Geographic Information System (GIS) Technicians is another high demand occupation. GIS is part of Northern Virginia Community College. Very strong programs in Northern Virginia. First tier of GIS technician requires only 8 credits and a student can pursue this while in high school.
- Centers of excellence in PA, regional training facilities are a good model.
- Can be difficult to create certain programs for Associate's and/or Bachelor's programs, e.g., construction management or plumbing. Varies by school division and among community colleges.
- Relevance of traditional high school program for senior year. Need a "Capstone" class for seniors to make learning real and incorporate local businesses.
- Growing need for entrepreneurial partnerships between schools and businesses. Curriculums must be adapted to be strategically aligned with workforce demands. Businesses would like to partner to help provide the labs/space for CTE programs if it accommodates a need for them.
- Investigate Workforce Investment Boards and how these Boards work with school divisions, not just the community college system.

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Tidewater Roundtable – Virginia Beach Advanced Technology Center

- Workforce Readiness Skills (WRS) 13 skills, address attendance, teamwork, computer literacy, etc. The WRS covers the “soft” skills that youth do not always get at home or in the basic school curriculum.
- Merger of career education with Virginia Wizard. Potential to take CTE in Virginia to the next level.
- CTE curriculum resource center budget being cut. Significant cuts in Governor’s reduction plan. Impact upon CTE.
- Not many parents or business folks aware of DOE’s 16 pathways and 79 career clusters. Very good information but not available to parents or to the general public.
- Leadership an issue. Superintendents call the shots, must have people ready to infuse new knowledge and keep learning of new skills continuous. Superintendents do not always buy into CTE. Only effective program if there is buy-in from the Superintendent.
- Education split between theory and application. The two need to be brought together.
- If all careers are accounted for in the pathways, but Engineering and Accounting included in CTE. CTE/regular curriculum with other pathways is not integrated. Separate tracks – diplomas v. CTE.
- Key to successful CTE, better partnerships, innovative ideas and collaboration between school system and business. Examples are Sentara and Virginia Beach schools create simulation labs for health professions.
- High schools have 24-credits for students to earn diploma, less and less elective opportunities. Pushing some credits down to middle school.
- Failure rate of students in science and math programs in college is 35 to 50 percent. Need to better prepare high school students for these requirements. CTE can help with this.
- Relevance in certifications a big issue. Technological advancements takes place at least every 12-months, new skills are introduced 12-months. DOE only reviews certifications every 12 months. Need to have rolling review of certifications, not just once every year.
- Evaluate using virtual tools v. real laboratory. Look at cost savings.
- Better prepare students for what they need to pursue their goals. If they want careers in healthcare, emphasize math or science classes and not PE classes for electives.
- Guidance Counselors do not have time to “counsel” students on requirements for classes or for other needs.

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- Need a paradigm shift in education. Need more show and tell and more business involvement.
- The #1 industry in Virginia is agriculture. Is this addressed in CTE?
- Workplace Readiness Skills (WRS) cannot be applied because there is no comparable test to use as a benchmark. However, these skills are what employers want. Virginia Beach uses WRS because businesses want this. Cost of testing is not included in the SOL testing budget in the Appropriations Act.

Shenandoah Roundtable – Massanutten Technical Center

- New programs are created based on the stated need of the community. Desire in Harrisonburg/Rockingham to keep students with desire to pursue certain careers in the community (e.g. firefighters and rescue workers).
- Issues with instructors in high school who are not eligible to teach dual enrollment classes because of the requirement that they have a Master's plus 18 credits in the specialty. Cannot justify teachers to return for Master's because the pay is the same. Certain majors do not really require a Master's degree but these teachers still cannot teach these dual enrollment classes. Difficult to find qualified teachers.
- Personal finance and economics class will be a barrier to CTE. It will take children out of CTE classes. Must be implemented but with no new staff or money. CTE will be eliminated in some schools. Other courses, like Geography, will also be eliminated to allow for this new course.
- State requirement to test 66% of all CTE completers and next year must test 100% of all CTE completers. No funding to accomplish this mandate. Frederick County spent \$38,000 for testing requirements last year but only \$14,000 in the testing budget.
- There are 30 industry credentials, 10 of these have different rules and all of these tests are not designed for youth, designed for adults.
- Different industries tests have completely different testing rules regarding use of proctors. This is another issue for industry credentials and testing for these credentials.
- Disconnect between industry credentials v. what industry wants. Industry and employees not always consulted. Some tests are obvious, particularly if a state license is issued. However, this is not always the case, e.g., welding.
- Every community college handles dual enrollment differently. Dual enrollment may count in the community college system but frequently, these classes cannot be transferred to a 4-year university.
- Tech prep consortium, based in the local community college, is a very strong partner for CTE.

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- Battle for resources with higher education. If 76 percent of all future jobs are not going to require a 4 year degree, assess shifting funding to local high schools, tech prep and community colleges. Evaluate using DOE building funds to fund CTE centers. Regional centers have strong CTE programs and can offer more than division because partnerships with several school divisions. Very cost effective. Currently, there are nine regional centers. They offer current programs for high-demand careers. Beneficial to communities.
- Career coaches make a tremendous difference. Trained to help students achieve future employment goals. There is a need to have career coaches for every high school but not enough funding for this.
- Classroom management needs to be included in teacher training programs. This could help retain teachers because they would have additional skills with effectively managing their classrooms.
- Funding and additional mandates a huge issue in CTE. New career and technical diplomas which require additional funding. Academic and career plans also require funding. Requirements keep increasing but no accompanying funding. This causes frustration among educators and administrators.
- Guidance counselors/schools get assessed on how many students attend a 4-year institution.
- CTE is expensive because schools cannot place 30 students in an Auto shop class unlike a Psychology course; there typically is a 20 student maximum.
- Certain credentials are powerful, such as A+ and Microsoft certification but others are not necessary. Workplace Readiness Skills are at the top of the list of what employers want.
- Virginia expanding Workplace Readiness Skills from 13 to 21. Redefining the skills and including a standalone test for assessing the Workplace Readiness Skills.
- Teacher praxis test not reflect teacher class work and irrelevant if you go to another state to teach because of reciprocity.
- "Pile ons" a problem in CTE. School divisions cannot continue to do more with less. Schools looking at all programs, summer school, gifted programs because they cannot spend what they do not have. Reiterate Academic and Career Plans and Finance and Economics requirements are problematic for schools.

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Galax Roundtable – Crossroads Institute

- There is a need for students to experience a “real world” curriculum.
- Training instructors for CTE is a challenge, as is training technology instructors..
- Career Coaches in Galax High School are very effective. Galax also already has an Academic and Career Plan (ACP).
- Wytheville College has a Career Coach in each service region’s high school. This was driven by the Wytheville Manufacturing Council. Career Coaches are effective because they help point students to appropriate postsecondary educational options. There was discussion of placing Career Coaches in middle schools.
- Reality Store is an effective program in Galax, with an equally effective teacher. The program, which is designed to teach students how to pay bills, is good preparation for college.
- Employers are looking for particular skills in employees. In middle schools, there are exploratory program to discuss this.
- Involvement of business leaders is crucial. Junior Achievement programs are effective because of the involvement of the business community. There needs to be a strategy to pull in the community. Job shadowing is an effective way to involve the business community.
- Industry is working hard to stay afloat. Carroll County has donated equipment/seed to help with the school division’s farm program.
- Every class is tied to the SOLs. Junior Achievement is successful because it teaches students about elements needed to succeed in business and industry.
- Region 6 Task Force was formed with CTE Directors to facilitate more business partnerships.
- There is a need for a media blitz on the benefits of CTE, to discuss CTE and its value, and compare it with 4-year degree. There is a huge disconnect between perception and reality. Educators need to have parents look at the statistics about CTE and help educate their children/students on the benefits of CTE. Have them look at student loans and the value of community college. Discuss with them how much a traditional 4-year college degree will cost them. Inform them how much debt they will have and how much income they will need to make to pay it off.
- Align CTE with Governor’s green job initiatives. Grayson Prison has done this. Virginia is 2nd for importing energy. Look at nuclear power, solar, clean coal and wind; Virginia has all these resources.
- Push to “lower the bar” so everyone has an opportunity to pursue college. Not every student will excel in or desire to pursue a traditional 4-year degree.

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- In Pulaski, the Chamber of Commerce is involved in a program where every junior will take a class in a career cluster and participate in a job shadowing program. The mentors in the program discuss with students the costs of colleges and the realities about certain careers.
- Industry certification requirements have accompanying challenges, particularly with diminishing staff levels.
- ACP to commence in 7th grade. This may be too soon to be effective because how few 7th graders know what they want to pursue as a career. There must be local flexibility in the implementation of the ACP. A 10th grade revision is more prudent.
- Dual enrollment/dual credit very beneficial and effective. Teacher certification is difficult. Wytheville Community College is 3rd in growth in dual enrollment in the Commonwealth. This is a true pathway; students do not have to duplicate classes.
- Industry certification is what employers want. Business and industry are constantly undergoing considerable change and it is challenging to keep up with this.
- There really is a need to add an hour to the school day to keep up with the rest of the world.
- Career planning is crucial and every bit, if not more so, more crucial than an Advanced Diploma.
- Work readiness skills are crucial. Academic classes are relevant but CTE has its worth. Every CTE program has WRS competencies. There is a need to prepare students for how the real world works.
- CTE provides extracurricular activities to students. Also provides valuable leadership skills to students.
- Real-world application is key and an integral part of CTE. Service learning can also be an effective part of CTE. An example is the Agriculture program's providing rain water for the football field.
- It is not the students that need to be convinced about the benefits of CTE; it is the parents.
- There is a need to steer students to the skilled trades. Also, need to teach younger students work readiness skills and teach older students more about self-sufficiency.
- There is a need to link economic development with CTE credentials. It is hard to keep up with all of the diverse certifications.
- Criticism of traditional education is that the system is not designed to "open the world up to young people when we still have them." Another example is that there are countless other career opportunities in the health arena other than nursing.

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- A “one size fits all” approach from Richmond will not help improve CTE.
- Entrepreneurship offers an effective career cluster and makes ideas real for students.
- Force credentialing in programs. The requirement for credentialing in CTE is 60% this year and will be 100% next year. There is no funding to help with this.
- Highly functioning communities include leadership for students. There may not be funding to accomplish this; however, citizens are engaged in the process. Accordingly, workplace readiness is valid and an effective component of economic development.
- Use CTE in extracurricular activities. In Agriculture classes, local students work cattle and learn how to do so through CTE. They, in turn, share with their families and pass along to the farming community. Tobacco money helps to fund this. Never underestimate the power of youth.

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Henry County Roundtable – Virginia Museum of Natural History

- 80% of community college attendees remain in the community.
- Henry County’s Career Hub an effective community-based program. Based in school and in Liberty Fair Mall, the Career Hub runs different series of events and is run by Henry County Schools but also offers programs to the public. The Career Hub successfully provided career development services to more than 1,000 students and parents in the community. There are 43 partners involved. The Career Hub to help feature on-time graduation rates. The Hub has two 21st Century Grants.
- Patrick Henry has the ACE Academy. Students can benefit from dual enrollment, transfer to Patrick Henry Community College and obtain an Associates Degree. The program has record enrollment, even with the budget cuts.
- Arrington Manufacturing plans to build a \$8.7 million motorsports facility. Two or three programs in the country. Virginia motorsports facility at Patrick Henry Community College.
- Agri-business is another critical industry. Various community partnerships are being formed.
- An effective approach would be for every student to complete 40-hours of community learning.
- Career Coaches are very effective and provide much-needed support. They also assist students in making good decisions.
- Pittsylvania already utilizes an ACP, which brings all 8th graders to the Tech Center.
- Very pleased with industry certifications in CTE, particularly state licensure. For example, for EMT exam, the state average pass rate is 10%, but Pittsylvania had a 50% pass rate.
- A small veterinarian program was created; this is tied to VCCS certifications.

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- State budget cuts may have impact on CTE teachers. Positions may be cut in local school divisions.
- Career Academy was proposed but, due to low enrollment, did not move forward with proposal. Good CTE programs are expensive, so must make good use of regional Career Academies.
- CTE has grown over the past several years and has exhibited rigor and relevance.
- Assess feasibility of matching Virginia CTE curriculum with NOCTI credentials. Delaware and New Jersey have done this and matched curriculum with testing.
- “Wall” for CTE: 4-year College vs. CTE stigma. Former sewing program in Martinsville closed in recent years because no longer a community need for such a program.
- In Martinsville, largest employers are school system and government. ADA is a strong CTE partner with Virginia Beach school system. Unfortunately, there is no large industry to establish partnership in Martinsville/Henry County, which is a barrier. Chantilly schools receive foundation money for CTE programs, but no one in this region to help with grants.
- CTE has an image program, although there is plenty rigor and relevance!
- HVAC is not the same as it was in years past; this requires 21st Century skills.
- There is a missing component in CTE; the SPED population is at-risk of dropping out of school. CTE teaches problem-solving skills and makes education relevant, particularly for SPED students.
- CTE has an image problem. It is important that the image of CTE demonstrate clear connections. CTE teaches high level skills which may not learned in Algebra class. For example, if a home is being built, the homeowner must trust that the contractor has strong Algebra skills. Therefore, CTE is not two different tracks and this must be demonstrated to repair the image of CTE. CTE is an effective strategy for economic development.
- The educational system is very categorical and does not always allow for an overlap in subjects. CTE does bridge this gap; students must learn academic subjects, as well as the CTE topic.
- The businesses community desires employees with 21st Century skills, including writing, communication and punctuality. Certifications such as WRS are needed and desired by employers.
- Project Lead the Way is a very effective program. It works well with students and is an example of a program with both rigor and relevance.

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- Employers want quality employees. Up to 70% of prospective employees cannot pass a drug screen. CTE may provide strong programs, but not provide potential employees if they cannot pass the criminal background test or a drug screen. Need to educate youngsters about this fact, include in WRS.
- Educators and parents need to emphasize the direct link between educational attainment and success in life. This is particularly true in high poverty areas. In Martinsville, 68% of students live in a single-parent household. There is a high teen pregnancy rate. Education can turn these statistics around. Suggestions: Instruct students to weigh their choices accordingly; help students see the connection with education and their life; show young people hope and substance abuse rate drops significantly. Allow companies to partner with schools and they can inform students that they must also pass a drug test and not have a criminal record.
- It is not enough to solicit business to the community. For example, EDS came to Mecklenburg County. Once the contracting jobs were completed, the community could not provide the type of skilled workforce required by the company. Therefore, the workforce became a commuting one. Jobs were not attainable for local applicants, because they did not possess the skills.

Southwest Roundtable – Washington County School Board Office

- Credentials are definitely a valuable component of CTE and students who obtain them typically will do well. CTE is aligned with SOLs, which makes it a very comprehensive program. Credentials mean something and are valued and validate what the program is all about.
- In Washington County, the Skill Center has 500 students enrolled, 9th through 12 grades. In Pulaski, there are 1,500 students in a CTE course.
- The Academic and Career Plan (ACP) must be a living document to be effective. It can help students see the value of their coursework. For example, if students understand how science can help them in their future, their grades go up. The ACP must be flexible in order to help the student.
- In Washington County, the graduation rate is 88.4%. For students taking CTE classes, the graduation rate is 100%.
- CTE gives students a skill. One participant noted that she had previously taken secretarial classes in a CTE program. She learned typing, marketing and office skills. This made her immediately employable.
- There are four Career Coaches from the community college in the high school that serve all students. Students who previously did not have a plan now have a plan of action. Three of the schools participate in Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP). This is a federal initiative that encourages young people to stay in school, study hard, and take the right courses to go to college. Mountain Empire has this, as does Scott County.

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- Montgomery County has four high schools. The school division utilizes block scheduling and seven periods and follows a comprehensive model. There is a question about whether to build a CTE center. They had 100% of their high school students enrolled in at least one CTE course; this is a local requirement.
- ACP and personal finance course requirements are stressful for counselors to implement. They require six to eight full-time teachers, which is not feasible. Participants noted that some school divisions will have to give something up that is already being taught. In Washington County, students are already being instructed in personal finance as part of computer courses.
- Students ask for standard or advanced diploma; they will not ask for a CTE diploma. This is not what students desire.
- Science Technology Engineering and Math Academies (STEM) in Virginia are excellent, but currently are not producing enough students to meet future demands for a competitive and well-educated workforce. STEM an excellent mixture of technical and real-world application.
- The mining industry is looking for employees, not just coal miner but all full-time positions. There is a tremendous amount of turnover in the industry, which is losing a generation of coal miners. The benefits of coal mining are not being communicated; there is much misinformation. The industry needs to capture the attention of students while they are young.
- Pride in work is a very important attribute which must be emphasized.
- Keyboarding is also a very important but frequently overlooked skill. Keyboarding is not emphasized as it ought to be. In Tazewell, typing is included as a class in the CTE program. Typing/keyboarding is a valuable aptitude and also beneficial for the academically "middle of the road" student.
- Washington County has 500 students attending the Career and Technical Center. This number has doubled over the past eight years. Some students obtain one, two or three credits in CTE. Students can still obtain an advanced diploma.
- Smyth County representatives noted the stigma still associated with CTE, which is a huge obstacle. Smyth County has held a community day to show what CTE can offer students. Highlighted classes included Introduction to Health Science and Medical Technology.
- Tazewell representatives noted that the quality of the students participating in CTE has been elevated in recent years. However, students are slow to warm-up to industry/manufacturing. Programs can be quite difficult. The program strives to take students to the next level.
- Student organizations offer tremendous value to students. Organizations such as Future Farmers of America are beneficial because they offer "hands-on" activities, provide classroom/lab exposure and offer a personal finance element, e.g., co-op.

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- New River Valley Community College key player and partner with Montgomery County Schools. New River Valley Community College offers specific areas of workforce development and training which is free to students.
- There is a need for more registered nurses (RN). Program has two RN classes and one for certified nurses' assistants.
- CTE is at the top of critical teacher shortages. It is very difficult to locate CTE instructors.
- Block scheduling offers an opportunity to offer different graduation requirements over the course of the school year: Zero period days, 32-credits in a block, zero period, 36-credits. Block scheduling a method for fulfilling various academic requirements.
- There are misplaced resources in the educational system. CTE offers skills that all students need. CTE can neither stand still nor stand alone.